What is Claimed is:

1. A method for processing signal in a communication system having a plurality of antennas, comprising the steps of:

(a) extracting a first signal mostly including a specific signal, and a second signal mostly including a signal other than the specific signal, from a signal received at the plurality of antennas;

(b) calculating an autocovariance matrix of each of the first and second signals;

(c) dividing at least any one of the calculated autocovariance matrices into a diagonal component and a non-diagonal component, to separate the matrix into matrices of the components;

(d) calculating a weighted value for the specific signal by using the separated autocovariance matrices; and,

(e) applying the weighted value to a transmission, or reception signal related to the specific signal, and forwarding a signal having the weighted value applied thereto.

2. A method as claimed in claim 1, wherein the communication system is a CDMA type radio communication system, and the first signal is a signal the received signal is despread in a particular code.

3. A method as claimed in claim 2, wherein the second signal is a signal before the received signal is despread in a particular code.

4. A method as claimed in claim 1, wherein the received signal includes a vector having a number of elements equal to, or less than a number of the antennas.

5. A method as claimed in claim 4, wherein the autocovariance matrix has a number of rows or columns the same with the number of elements of the vector of the received signal.

6. A method as claimed in claim 1, wherein the calculated weighted value is a vector having a number of element the same with the number of rows or columns of the autocovariance matrix.

7. A method as claimed in claim 1, wherein the step (d) includes the step of obtaining a weighted vector which leads a ratio of a product of the autocovariance of the first signal and the weighted value to a product of the autocovariance of the second signal and the weighted value to a maximum.

8. A method as claimed in claim 7, wherein the separated matrix is the autocovariance matrix of the second signal.

9. A method as claimed in claim 8, wherein the weighted value $\underline{w}$ can be calculated by $\underline{w} = \frac{\{R_{yy}(R_{xx}{}^{D})^{-1} - \lambda R_{xx}{}^{O}(R_{xx}{}^{D})^{-1}\}\underline{w}}{\lambda}$, where $\underline{x}$ denotes a second signal vector, $\underline{y}$ denotes a first signal vector, Rxx denotes the autocovariance matrix of the $\underline{x}$, Ryy denotes the autocovariance matrix of the $\underline{y}$, Rxx^{D} denotes a matrix of diagonal components of the Rxx, Rxx^{O} denotes a matrix of non-diagonal components of the Rxx, $(Rxx^{D})^{-1}$ denotes an inverse matrix of the Rxx^{D}, and λ denotes a greatest proper value of $Ryy\underline{w} - \lambda Rxx\underline{w}$, which is a generalized Eigenvalue problem.

10. A method as claimed in claim 8, wherein the weighted value $\underline{w}$ can be renewed with respect to a snapshot index 'k' and a following snapshot index (k+1) by $\underline{w}(k+1) = \frac{\{R_{yy}(R_{xx}{}^{D})^{-1} - \lambda R_{xx}{}^{O}(R_{xx}{}^{D})^{-1}\}\underline{w}(k)}{\lambda}$, where $\underline{x}$ denotes a second signal vector, $\underline{y}$ denotes a first signal vector, Rxx denotes the autocovariance matrix of the $\underline{x}$, Ryy denotes the autocovariance matrix of the $\underline{y}$, Rxx^D denotes a matrix of diagonal components of the Rxx, Rxx^O denotes a matrix of non-diagonal components of the Rxx, $(Rxx^D)^{-1}$ denotes an inverse matrix of the Rxx^D, and λ denotes a greatest proper value of Ryy$\underline{w}$ - λRxx$\underline{w}$, which is a generalized Eigenvalue problem.

11. A method as claimed in claim 8 or 9, wherein the greatest proper value λ of Ryy$\underline{w}$ - λRxx$\underline{w}$, which is a generalized Eigenvalue problem, can be calculated by $\lambda = \frac{\underline{w}^H R_{yy} \underline{w}}{\underline{w}^H R_{xx} \underline{w}}$ with respect to 'H', the Hermitian operator.

12. A method as claimed in claim 7, wherein the separated matrix is an autocovariance matrix of the first signal.

13. A method as claimed in claim 12, wherein the weight vector $\underline{w}$ can be calculated by $\underline{w} = (\lambda Rxx\underline{w} - Ryy^O\underline{w})(Ryy^D)^{-1}$, where $\underline{x}$ denotes a second signal vector, $\underline{y}$ denotes a first signal vector, Rxx denotes the autocovariance matrix of the $\underline{x}$, Ryy denotes the autocovariance matrix of the $\underline{y}$, Ryy^D denotes a matrix of diagonal components of the Ryy, Ryy^O denotes a matrix of non-diagonal components of the Ryy, $(Ryy^D)^{-1}$ denotes an inverse matrix of the

Ryy^D, and λ denotes a greatest proper value of $Ryy\underline{w} - \lambda Rxx\underline{w}$, which is a generalized Eigenvalue problem.

14. A method as claimed in claim 12, wherein the weight vector $\underline{w}$ can be calculated by $\underline{w}(k+1) = \lambda Rxx\underline{w}(k)(Ryy^D)^{-1} - Ryy^O\underline{w}(k)(Ryy^D)^{-1}$, where $\underline{x}$ denotes a second signal vector, $\underline{y}$ denotes a first signal vector, Rxx denotes the autocovariance matrix of the $\underline{x}$, Ryy denotes the autocovariance matrix of the $\underline{y}$, Ryy^D denotes a matrix of diagonal components of the Ryy, Ryy^O denotes a matrix of non-diagonal components of the Ryy, $(Ryy^D)^{-1}$ denotes an inverse matrix of the Ryy^D, and λ denotes a greatest proper value of $Ryy\underline{w} - \lambda Rxx\underline{w}$, which is a generalized Eigenvalue problem.

15. A method as claimed in claim 13 or 14, wherein the greatest proper value λ of $Ryy\underline{w} - \lambda Rxx\underline{w}$, which is a generalized Eigenvalue problem, can be calculated by $\lambda = \dfrac{\underline{w}^H R_{yy} \underline{w}}{\underline{w}^H R_{xx} \underline{w}}$ with respect to 'H', the Hermitian operator.